

Product Brief

Intel® 865G Chipset

Embedded Computing



Intel® 865G Chipset for Embedded Computing

Product Overview

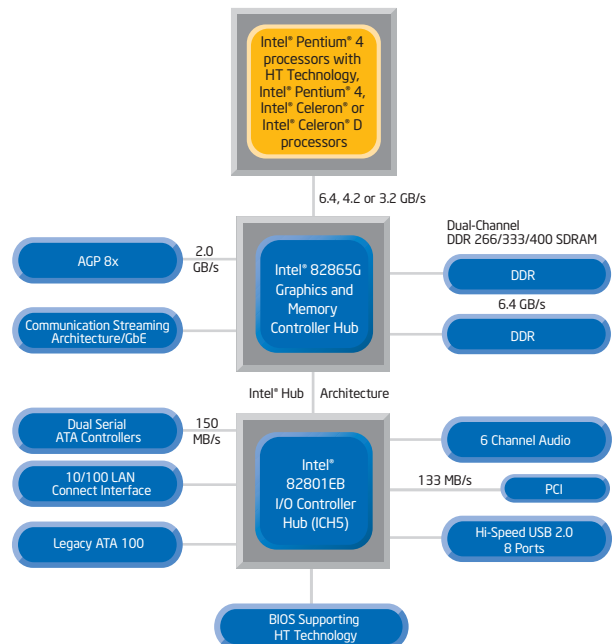
The Intel® 865G chipset delivers highly flexible and scalable solutions for a broad range of embedded computing platforms requiring enhanced graphics capabilities. It features integrated Intel® Extreme Graphics 2 Technology for an intense and realistic visual experience without requiring a separate graphics card.

Designed and optimized for Intel® Pentium® 4 processors with Hyper-Threading Technology¹ (HT Technology), this chipset also supports Intel® Pentium® 4, Intel® Celeron®, and Intel® Celeron® D processors. Platforms based on the Intel 865G chipset provide scalable performance and offer ideal price/performance solutions for embedded computing applications.

The Intel 865G chipset consists of the Intel® 82865G Graphics and Memory Controller Hub (GMCH) and the Intel® 82801EB I/O Controller Hub (ICH5). The GMCH features Dynamic Video Memory Technology (DVMT) and Zone Rendering Technology (ZRT), providing an innovative graphics architecture that optimizes system performance by balancing memory usage between graphics and other subsystems.

Product Highlights

- 400, 533 and 800 MHz system bus: Scalable to higher performance processors on Intel's embedded roadmap – with or without HT Technology – in the 478-pin package
- 533 and 800 MHz system bus: Scalable to higher performance processors on Intel's embedded roadmap in the LGA-775-pin package
- DDR 266/333/400 SDRAM: Dual-channel flexible memory technology allows a full spectrum of DDR usage from high-performance to more cost-effective systems
- Supports up to 4 GB of system memory



- Intel Extreme Graphics 2 Technology: Numerous APIs allow software developers to create real-life environments and characters
- Intel® Hub Architecture: Dedicated data paths deliver maximum bandwidth for I/O-intensive applications
- Digital Video Output Interface: Two DVO ports offer maximum display flexibility through the standard AGP interface
- AGP 8x graphics interface
- LAN Connect Interface (LCI): Flexible network solutions including 10/100 Mbps Ethernet, and 10/100 Mbps Ethernet with LAN manageability
- Integrated Hi-Speed USB 2.0: Eight ports offer up to 40x greater bandwidth over USB 1.1 to support a variety of today's demanding high-speed I/O peripherals
- Serial ATA: Dual-independent SATA controllers facilitate high-speed storage transfers (up to 150 MB/s transfer rate per interface) and simplified hard drive upgrades

Product Highlights (continued)

- Ultra ATA/100: Two ATA interfaces support existing industry HDD and optical drive interfaces
- AC'97 Controller: Support for digital 5.1 channel output (such as Dolby Digital¹ AC-3*) transmitted via S/PDIF (SPDIF_OUT) on external codec
- Intel® Communication Streaming Architecture: Wire-speed GbE with dedicated network bus for performance network connectivity
- Low-power sleep mode: Saves energy
- Embedded lifecycle support
- Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Communications Alliance (intel.com/go/ica), Intel helps cost-effectively meet development challenges and speed time-to-market

Embedded Processors supported by the Intel® 865G Chipset	Frequency	System Bus	L2 Memory	Package	Process Technology
Intel® Pentium® 4 processor 551 ¹ with HT Technology [†]	3.4 GHz	800 MHz	1 M	LGA-775	90nm
Intel® Pentium® 4 processor with HT Technology	3.0 GHz	800 MHz	1 M	FC-µPGA4/µPGA478	90nm
Intel® Pentium® 4 processor	2.4, 2.8 GHz	533 MHz	512 KB	FC-PGA2/µPGA478	130nm
Intel® Pentium® 4 processor	2.0, 2.6 GHz	400 MHz	512 KB	FC-PGA2/µPGA478	130nm
Intel® Celeron® D processor 341 ¹ with EM64T*	2.93 GHz	533 MHz	256 KB	LGA-775	90nm
Intel® Celeron® D processor 335 ¹	2.8 GHz	533 MHz	256 KB	FC-µPGA4/µPGA478	90nm
Intel® Celeron® processor	2.0, 2.5 GHz	400 MHz	128 KB	FC-PGA2/µPGA478	130nm

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Product	Product Code	Package	Features
Intel® 82865G Graphics and Memory Controller Hub (GMCH)	82865G	932 FCBGA	<ul style="list-style-type: none"> ▪ 400/533/800 MHz system bus ▪ Dual-channel DDR 266/333/400 SDRAM ▪ Intel® Extreme Graphics 2 Technology ▪ AGP 8x graphics interface
Intel® 82801EB I/O Controller Hub (ICH5)	82801EB	460 µBGA	<ul style="list-style-type: none"> ▪ Six PCI masters ▪ Two Serial ATA and two Parallel ATA interfaces ▪ Eight Hi-Speed USB 2.0 ports ▪ AC'97 support

¹Separate license may be required; contact vendor for details.

*Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/products/processor_number for details.

[†]Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor supporting Hyper-Threading Technology and an HT Technology-enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software used. See <http://www.intel.com/info/hyperthreading> for more information, including details on which processors support HT Technology.

*Intel EM64T requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. See www.intel.com/info/em64t for more information including details on which processors support Intel EM64T or consult with your system vendor for more information.

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